CLAIMS:

1. An electric device (100) with a body (102) having a resistor (107) comprising a phase change material being changeable between a first phase and a second phase, the resistor (107) having a first electrical resistance when the phase change material is in the first phase, and a second electrical resistance, different from the first electrical resistance, when the phase change material is in the second phase, the phase change material constituting a conductive path between a first contact area and a second contact area, a cross-section of the conductive path being smaller than the first contact area and the second contact area.

2. An electric device (100) as claimed in Claim 1, wherein a part of the conductive path having said cross-section constitutes a volume of phase change material, the volume having an electrical resistance which is larger than an electrical contact resistance at the first contact area and/or at the second contact area, independent of whether the phase change material is in the first phase or the second phase.

3. An electric device (100) as claimed in Claim 1, further comprising a heating element (106) able to conduct an electric current for enabling a transition from the first phase to the second phase.

4. An electric device (100) as claimed in Claim 3, wherein the heating element (106) is arranged in parallel with the resistor (107).

5. An electric device (100) as claimed in Claim 4, wherein the heating element (106) has a heating elements electrical resistance which is smaller than the first electrical resistance and the second electrical resistance.

6. An electric device (100) as claimed in Claim 5, wherein the heating elements electrical resistance is larger than 0.3 times the minimum of the first electrical resistance and the second electrical resistance.

7. An electric device (100) as claimed in Claim 3, wherein the heating element (106) is in direct contact with the resistor (107).

8. An electric device (100) as claimed in Claim 1, wherein the resistor (107) constitutes a memory element (170), and the body (102) comprises:

- an array of memory cells, each memory cell comprising a respective memory element (170) and a respective selection device (171), and
- a grid of selection lines (120, 121),

each memory cell being individually accessible via the respective selection lines (120, 121) connected to the respective selection device (171).

9. An electric device (100) as claimed in Claim 8, wherein:

- the selection device (171) comprises a metal oxide semiconductor field effect transistor having a source region (172), a drain region (173) and a gate region (174), and
- the grid of selection lines (120, 121) comprises N first selection lines (120), M second selection lines (121), and an output line,

the resistor (107) of each memory element (170) electrically connecting a first region selected from the source region (172) and the drain region (173) of the corresponding metal oxide semiconductor field effect transistor to the output line, a second region of the corresponding metal oxide semiconductor field effect transistor selected from the source region (172) and the drain region (173) and being free from contact with the first region, being electrically connected to one of the N first selection lines (120), the gate region (174) being electrically connected to one of the M second selection lines (121).

10. Method of manufacturing an electric device (100) as claimed in Claim 1, comprising the steps of:

- providing a main surface of a pre-fabricated electric device (100) with a layer (107) of the phase change material, and
- reducing a cross-section of a conductive path in the layer (107) between a first contact area and a second contact area, the cross-section being smaller than the first contact area and the second contact area.

11. A method as claimed in Claim 10, wherein the main surface has a step profile and the step of reducing the cross-section comprises an anisotropic etching step for forming a sidewall spacer along at least a part of the step profile.

12. A method as claimed in Claim 10, wherein a part of the conductive path having said cross-section constitutes a volume of phase change material, and the step of reducing the cross-section comprises the sub-steps of:

- providing a resist layer sensitive to electrons,
- writing a pattern with an electron beam into the resist layer, the pattern defining at least the volume of the phase change material, and
- developing the resist.